

IN THE CLAIMS

The presently pending claims are reproduced below for convenience. The claims are not amended in the present paper.

Claim 1 (Previously Presented): A catalytic composition, comprising:
zeolite and an inorganic binder,
wherein the zeolite is zeolite Y, and the binder is γ -alumina,
wherein said composition has a pore volume, obtained by adding the mesoporosity and macroporosity fractions present in the catalytic composition itself, greater than or equal to 0.7 cc/g,
wherein at least 30% of said volume consists of pores with a diameter greater than 100 nanometers.

Claim 2 (Original): The catalytic composition according to claim 1, having a crushing strength equal to or higher than 1.7 kg/mm.

Claim 3 (Original): The catalytic composition according to claim 1, having an apparent density not higher than 0.5 cc/g.

Claim 4 (Original): The catalytic composition according to claim 1, in the form of particles having a diameter not lower than 1.8 mm.

Claim 5 (Original): The catalytic composition according to claim 4, in the form of particles having a diameter not lower than 2.0 mm.

Claim 6 (Original): The catalytic composition according to claim 1, in the form of cylindrical pellets.

Claim 7 (Canceled).

Claim 8 (Previously Presented): The catalytic composition according to claim 1, wherein the zeolite Y is in acidic form.

Claim 9 (Previously Presented): The catalytic composition according to claim 1, wherein the zeolite Y and the binder are in a weight ratio greater than 1:1 and lower than or equal to 4:1.

Claim 10 (Canceled).

Claim 11 (Previously Presented): The catalytic composition according to claim 1, wherein the zeolite Y has a $\text{SiO}_2/\text{Al}_2\text{O}_3$ molar ratio ranging from 10 to 20.

Claim 12 (Previously Presented): The catalytic composition according to claim 1, wherein the zeolite Y has a $\text{SiO}_2/\text{Al}_2\text{O}_3$ molar ratio ranging from 11 to 17.

Claim 13 (Canceled).

Claim 14 (Previously Presented): A process for preparing the catalytic composition of claim 1, comprising:

a) preparing a mixture including zeolite Y in acidic form and a precursor of the binder selected from the group consisting of bohemite and pseudo-bohemite, by means of mechanic mixing of the components, using a high speed mixer, at a revolution speed of between 900 and 1100 rpm, for not less than 50 minutes;

b) slowly adding to said mixture, under stirring, a solution at a concentration not higher than 0.5% by weight of an acid and demineralized water, in such a quantity as to have a final ratio between the acid weight and total weight of the mixture prepared in step a) of between 0.25 and 0.50%;

c) submitting the mixture obtained in the previous step b) to an extrusion forming process;

d) submitting the product obtained in step c) to drying in a ventilated oven, at a temperature not higher than 30°C, for not less than 48 hours; and

e) submitting the product obtained in step d) to an air calcination process starting from room temperature up to temperatures not lower than 550°C and not higher than 600°C for an overall calcination time of not less than 30 hours.

Claim 15 (Original): The process according to claim 14, wherein, in step (b), the mixing to which the mixture is subjected during the addition of the acid, is effected at a rate ranging from 200 to 600 rpm.

Claim 16 (Previously Presented): The process according to claim 14, wherein, in step (b), the acid is selected from the group consisting of acetic acid, nitric acid and oxalic acid.

Claim 17 (Original): The process according to claim 16, wherein the acid is acetic acid.

Claim 18 (Previously Presented): A process for the transalkylation of aromatic hydrocarbons, comprising:

contacting an aromatic hydrocarbon with one or more polyalkylated aromatic hydrocarbons in the presence of the catalytic composition of claim 1, operating so that the reaction takes place at least partially in liquid phase.

Claim 19 (Original): The process according to claim 18, wherein the catalytic composition contains zeolite Y in acidic form.

Claim 20 (Original): The process according to claim 19, wherein the zeolite Y has a $\text{SiO}_2/\text{Al}_2\text{O}_3$ molar ratio ranging from 10 to 20.

Claim 21 (Previously Presented): The process of claim 18, carried out at a temperature ranging from 150 to 300°C, a pressure ranging from 20 to 50 atms and a WHSV ranging from 0.5 to 10 hours⁻¹.

Claim 22 (Previously Presented): The process of claim 18, wherein the molar ratio between the aromatic hydrocarbon and the sum of the polyalkylated aromatic hydrocarbons varies from 1 to 40.

Claim 23 (Original): The process according to claim 22, wherein the molar ratio between the aromatic hydrocarbon and polyalkylated aromatic hydrocarbons varies from 3 to 30.

Claim 24 (Previously Presented): The process of claim 18, wherein the aromatic hydrocarbon is benzene.

Claim 25 (Previously Presented): The process of claim 18, wherein the polyalkylated aromatic hydrocarbon is diethyl benzene, optionally mixed with triethyl benzene, or diisopropyl benzene, optionally mixed with tri-isopropyl benzene.

Claim 26 (Previously Presented): The process of claim 25, wherein the aromatic hydrocarbon is benzene and the polyalkylated aromatic hydrocarbon is diethyl benzene and optionally triethyl benzene.

Claim 27 (Previously Presented): A process for preparing mono-alkylated aromatic hydrocarbons, comprising:

a) contacting an aromatic hydrocarbon, in the presence of an acidic catalyst, with a C₂-C₄ olefin, under alkylation conditions which are such that the reaction takes place at least partially in liquid phase,

b) separating the product obtained into a fraction containing an aromatic hydrocarbon, a fraction containing a mono-alkylated aromatic hydrocarbon, a fraction containing polyalkylated aromatic hydrocarbons, and a fraction of heavy aromatic hydrocarbons, and

c) contacting the fraction containing polyalkylated aromatic hydrocarbons in contact with an aromatic hydrocarbon, in the presence of the catalyst of claim 1, under transalkylation conditions which are such that the reaction takes place at least partially in liquid phase.

Claim 28 (Original): The process according to claim 27, wherein in step (c) the catalytic composition contains zeolite Y in acidic form.

Claim 29 (Original): The process according to claim 28, wherein the zeolite Y has a $\text{SiO}_2/\text{Al}_2\text{O}_3$ molar ratio ranging from 10 to 20.

Claims 30-31 (Canceled).

Claim 32 (Previously Presented): The process of claim 27, wherein in step (a) the olefin is ethylene or propylene.

Claim 33 (Original): The process according to claim 32, wherein the olefin is ethylene.

Claim 34 (Previously Presented): The process of claim 27, wherein in step (a) the aromatic hydrocarbon is benzene.

Claim 35 (Previously Presented): The process of claim 27, wherein in step (a) the catalyst contains beta zeolite, the olefin is ethylene and the aromatic hydrocarbon is benzene.

Claim 36 (Previously Presented): The process of claim 27, wherein in step (b) the fraction of polyalkylated aromatic hydrocarbons prevalently contains dialkylated aromatic hydrocarbons.

Claim 37 (Previously Presented): The process of claim 27, wherein in step (a) the hydrocarbon is benzene and the olefin is ethylene, in step (b) the first fraction contains benzene, the second fraction contains ethyl benzene, the third fraction prevalently contains diethyl benzene and the last fraction consists of a mixture of heavy hydrocarbons having a boiling point equal to or higher than 260°C, and in step (c) the third fraction is put in contact with benzene.

Claim 38 (Canceled).

Claim 39 (Previously Presented): The process of claim 27, wherein the fraction of polyalkylated products fed to step (c) contains a mixture of Flux oil.

Claim 40 (Previously Presented): The process of claim 27, wherein the fraction of polyalkylated products fed to step (c) contains butyl benzenes in a quantity not higher than 2% by weight with respect to the total weight of the mixture fed.

Claim 41 (Previously Presented): The catalytic composition according to claim 1, having a crushing strength of 2.1 kg/mm or greater according to ASTM D6175-98.

Claim 42 (Previously Presented): The catalytic composition according to claim 1, wherein the zeolite Y is dispersed in the inorganic binder and the inorganic binder is γ -alumina.

Claim 43 (Previously Presented): The process of claim 27, wherein in step (a) the acidic catalyst is a catalytic composition containing a zeolite.

Claim 44 (Previously Presented): The process of claim 28, wherein in step (a) the acidic catalyst is a catalytic composition containing a zeolite.

Claim 45 (Previously Presented): The process of claim 29, wherein in step (a) the acidic catalyst is a catalytic composition containing a zeolite.

Claim 46 (Previously Presented): The process according to claim 43, wherein the zeolite is beta zeolite.

Claim 47 (Previously Presented): The process according to claim 44, wherein the zeolite is beta zeolite.

Claim 48 (Previously Presented): The process according to claim 45, wherein the zeolite is beta zeolite.

Claim 49 (Previously Presented): The process of claim 28, wherein in step (a) the olefin is ethylene or propylene.

Claim 50 (Previously Presented): The process of claim 29, wherein in step (a) the olefin is ethylene or propylene.

Claim 51 (Previously Presented): The process of claim 37, wherein the acidic catalyst in step (a) is beta zeolite.